

AP20 Rec'd PCT/PTO 09 JUN 2006

Sequence Listing

SEQ ID NO. 1 - The full-length nucleotide sequence of the spike (S) gene of SARS CoV, clone 12 of 2774 strain
RNA linear

ORGANISM: SARS coronavirus 2774 strain

Viruses; ssRNA positive-strand viruses, no DNA stage;
Nidovirales; Coronaviridae; Coronavirus.

1 atgtttattt tcttattatt tcttactctc actagtggta gtgacctga cgggtgcacc
acttttgatg 70 71 . atgttcaagc tctaattac actcaacata cttcatctat gagggggggt
tactatcctg atgaaatttt 140 141 tagatcagac actctttatt taactcagga tttatctctt
ccattttatt ctaatgttac agggtttcat 210 221 actattaatc atacgtttgg caaccctgtc
atacctttta aggatggtat ttattttgct gccacagaga 280 281 aatcaaatgt tgtccgtggt
tgggtttttg gttctacat gaacaacaag tcacagtcgg tgattattat 350 351 taacaattct
actaatgttg ttatacgagc atgtaacttt gaattgtgtg acaacccttt ctttgcgtgt 420 421
tctaaaccca tgggtacaca gacacatact atgatattcg ataatgcatt taattgcact ttcgagtaca
490 491 tatctgatgc cttttcgctt gatgtttcag aaaagtcagg taattttaaa cacttacgag
agtttggtgt 560 561 taaaaataaa gatgggtttc tctatgttta taagggtctat caacctatag
atgtagttcg tgatctacct 630 631 tctggtttta acactttgaa acctattttt aagttgcctc
ttggtattaa cattacaaat tttagagcca 700 701 ttcttacagc cttttcacct gctcaagaca
tttggggcac gtcagctgca gcctattttg ttggcgatgt 770 771 aaagccaact acatttatgc
tcaagtatga tgaatgtgt acaatcacag atgctgttga ttgttctcaa 840 841 aatccacttg
ctgaactcaa atgctctgtt aagagctttg agattgacaa aggaatttac cagacctcta 910 911
atttcagggt tgttccctca ggagatgttg tgagattccc taatattaca aacttggtgc cttttggaga
980
981 ggtttttaat gctactaaat tcccttctgt ctatgcatgg gagagaaaaa aaatttctaa
ttgtgtgtgt 1050 1051 gattactctg tgctctacaa ctcaacagtt ttttcaacct ttaagtgtca
tggcgtttct gccactaagt 1120 1121 tgaatgatct ttgcttctcc aatgtctatg cagattcttt
tgtagtcaag ggagatgatg taagacaaat 1190 1191 agcgccagga caaactggtg ttattgctga
ttataattat aaattgccag atgatttcat ggggtgtgtc 1260 1261 cttgcttgga atactaggaa
cattgatgct acttcaactg gtaattataa ttataaatat aggtatctta 1330 1331 gacatggcaa
gcttaggccc tttagagag acatatctaa tgtgcctttc tcccctgatg gcaaaccttg 1400 1401
caccacacct gctcttaatt gttattggcc attaaatgat tatggttttt acaccactac tggcattggc
1470 1471 taccaacctt acagagttgt agtactttct tttgaacttt taaatgcacc ggccacggtt
tgtggaccaa 1540 1541 aattatccac tgaccttatt aagaaccagt gtgtcaattt taattttaat
ggactcactg gtactggtgt 1610 1611 gttaactcct tcttcaaaga gatttcaacc atttcaacaa
tttggccgtg atgtttctga ttctactgat 1680 1681 tccgttcgag atcctaaaac atctgaaata
ttagacattt caccttgctc ttttgggggt gtaagtgtaa 1750 1751 ttacacctgg aacaaatgct
tcatctgaag ttgctgttct atatcaagat gttaactgca ctgatgtttc 1820 1821 tacagcaatt
catgcagatc aactcacacc agcttggcgc atatattcta ctggaaacaa tgtattccag 1890 1891
actcaagcag gctgtcttat aggagctgag catgtcgaca cttcttatga gtgcgacatt cctattggag
1960 1961 ctggcatttg tgctagttac catacagttt ctttattacg tagtactagc caaaaatcta
ttgtggctta 2030 2031 tactatgtct ttaggtgctg atagttcaat tgcttactct aataacacca
ttgctatacc tactaacttt 2100 2101 tcaattagca ttactacaga agtaatgcct gtttctatgg
ctaaaacctc cgtagattgt aatatgtaca 2170 2171 tctgcggaga ttctactgaa tgtgctaatt
tgcttctcca atatggtagc ttttgacac aactaaatcg 2240 2241 tgcaactctca ggtattgctg
ctgaacagga tcgcaacaca cgtgaagtgt tcgctcaagt taaacaaatg 2310 2311 tacaaaaccc

caactttgaa atattttggt ggttttaatt tttcacaaat attacctgac cctctaaagc 2380 2381
 caactaagag gtcttttatt gaggacttgc tctttaataa ggtgacactc gctgatgctg gcttcatgaa
 2450 2451 gcaatatggc gaatgcctag gtgatattaa tgctagagat ctcatttgctg cgcagaagtt
 caatggactt 2520 2521 acagtgttgc cactctgct cactgatgat atgattgctg cctacactgc
 tgctctagtt agtggtactg 2590 2591 ccactgctgg atggacattt ggtgctggcg ctgctcttca
 aatacccttt gctatgcaaa tggcatatag 2660
 2661 gttcaatggc attggagtta cccaaaatgt tctctatgag aacaaaaaac aaatcgccaa
 ccaatttaac 2730 2731 aaggcgatta gtcaattca agaactactt acaacaacat caactgcatt
 gggcaagctg caagacgttg 2800 2801 ttaaccagaa tgctcaagca ttaaacaacac ttgttaaaca
 acttagctct aattttggtg caatttcaag 2870 2871 tgtgctaaat gatatccttt cgcgacttga
 taaagtcgag gcggaggtac aaattgacag gttattaca 2940 2941 ggcagacttc aaagccttca
 aacctatgta acacaacaac taatcagggc tgctgaaatc agggcttctg 3010 3011 ctaatcttgc
 tgctactaaa atgtctgagt gtgttcttgg acaatcaaaa agagttgact tttgtgaaa 3080 3081
 gggctaccac cttatgtcct tcccacaagc agccccgc at ggtgttgtct tctacatgt cacgtatgctg
 3150 3151 ccattcccag agaggaactt caccacagcg ccagcaattt gtcatgaagg caaagcatac
 ttcctctg 3220 3221 aagggttttt tgtgtttaat ggcacttctt ggtttattac acagaggaac
 ttcttttctc cacaaataat 3290 3291 tactacagac aatacatttg tctcaggaaa ttgtgatgtc
 gttattggca tcattaacaa cacagtttat 3360 3361 gatcctctgc aacctgagct tgactcattc
 aaagaagagc tggacaagta cttcaaaaat catacatcac 3430 3431 cagatgttga tcttggcgac
 atttcaggca ttaacgcttc tgcgtcaac attcaaaaag aaattgaccg 3500 3501 cctcaatgag
 gtcgctaaaa atttaaatga atcactcatt gaccttcaag aattgggaaa atatgagcaa 3570 3571
 tatattaaat ggccttggtg tgtttggctc ggcttcattg ctggactaat tgccatcgct atggttacaa
 3640 3641 tcttgctttg ttgcatgact agttgttgca gttgcctcaa ggggtgatgc tcttgtggtt
 cttgctgcaa 3710 3711 gtttgatgag gatgactctg agccagttct caagggtgct aaattacatt
 acaca 3765

SEQ ID NO. 2 - The full-length amino acid sequence of the spike (S)
 gene of SARS CoV, clone 12 of 2774 strain
 Amino acid

1 MFIFLLFLTL TSGSDLRCT TFDDVQAPNY TQHTSSMRGV YYPDEIFRSD TLYLTQDLSL
 PFYSNVTGFH 70
 71 TINHTFGNPV IPFKDGIYFA ATEKSNVVRG WVGSTMNK SQSVIIINNS TNVVIRACNF
 ELCNPFPAV 140
 141 SKPMGTQHT MIFDNAFNCT FEYISDAFSL DVSEKSGNFK HLREFVFNK DGFLYVYKGY
 QPIDVVRDLP 210
 211 SGFNTLKPIF KLPLGINITN FRILTAFSP AQDIWGSAA AYFVGDLKPT TFMLKYDENG
 TITDAVDCSQ 280
 281 NPLAELKCSV KSFEIDKGIY QTSNFRVVPV GDVVRFPNIT NLCPFGEVFN ATKFPSVYAW
 ERKKISNCVA 350 351 DYSLYNSTV FSTFKCYGVS ATKLNDLCFS NVYADSFVVK GDDVRQIAPG
 QTGVIADYNY KLPDDFMGCV 420 421 LAWNTRNIDA TSTGNYNYKY RYL RHGKLRP FERDISNVFP
 SPDGKPCTPP ALNCYWPLND YGFYTTTGIG 490 491 YQPYRVVLS FELLNAPATV CGPKLSTDLI
 KNQCVNFENFEN GLTGTGVLTP SSKRFQPFQ FGRDVSDFTD 560 561 SVRDPKTSEI LDISPCSFEG
 VSVITPGTNA SSEVAVLYQD VNCTDVSTAI HADQLTPAWR IYSTGNVVFQ 630 631 TQAGCLIGAE
 HVDTSYECDI PIGAGICASY HTVSLLRSTS QKSIVAYTMS LGADSSIAYS NNTIAIPTNF 700 701
 SISITTEVMP VSMKTSVDC NMYICGDSTE CANLLQYGS FCTQLNRALS GIAAEQDRNT REVFAQVKQM
 770 771 YKTPTLKYFG GFNFSQILPD PLKPTKRSFI EDLLFNKVTI ADAGFMKQYG ECLGDINARD

LICAQKFENGL 840 841 TVLPPLLTDD MIAAYTAALV SGTATAGWTF GAGAALQIPF AMQMAYRFNG
 IGVTONVLYE NQKQIANQFN 910 911 KAISQIQESL TTTSTALGKL QDVVNQNAQA LNTLVKQLSS
 NFGAISSVLN DILSRDLKVE AEVQIDRLIT 980 981 GRLQSLQTYV TQQLIRAAEI RASANLAATK
 MSECVLGQSK RVDFCGKGYH LMSFPQAAPH GVVFLHVTYA 1050 1051 PSQERNFTTA PAICHEGKAY
 FPREGVFVFN GTSWFITQRN FFSPQIITTD NTFVSGNCDV VIGIINNTVY 1120
 1121 DPLQPELDSF KEELDKYFKN HTSPDVDLGD ISGINASVVN IQKEIDRLNE VAKNLNESLI
 DLQELGKYEQ 1190 1191 YIKWPWYVWL GFIAGLIAIV MVTILLCCMT SCCSCLKGAC SCGSCCKFDE
 DDSEPVKGV KLHYT 1255

SEQ ID NO. 3 - The nucleotide sequence of SΔ10 fragment of the spike (S) gene of SARS CoV, clone 12 of 2774 strain

3087 taccacctta tgccttccc acaagcagcc ccgcatggtg ttgtcttctt acatgtcacg
 tatgcgccat 3157 3158 cccaggagag gaacttcacc acagcgccag caatttgta tgaaggcaaa
 gcatacttcc ctcgtgaagg 3227 3228 tgtttttgtg tttaatggca cttcttggtt tattacacag
 aggaacttct tttctccaca aataattact 3297 3298 acagacaata catttgtctc aggaaattgt
 gatgtcgta ttggcatcat taacaacaca gtttatgata 3367 3368 ctctgcaacc tgagcttgac
 tcattcaaag aagagctgga caagtacttc aaaaatcata catcaccaga 3437 3438 tgttgatctt
 ggcgacattt caggcattaa cgcttctgtc gtcaacattc aaaaagaaat tgaccgcctc 3507 3508
 aatgaggtcg ctaaaaattt aatgaatca ctcattgacc ttcaagaatt gggaaaatat gagcaatata
 3577
 3578 tta
 3581

SEQ ID NO. 4 - The amino acid sequence of SΔ10 fragment of the spike (S) gene of SARS CoV, clone 12 of 2774 strain

1029 YHLSFPQAA PHGVVFLHVT YAPSQERNFT TAPAICHEGK AYFPREGVFV FNGTSWFITQ
 RNFFSPQIIT 1099 1100 TDNTFVSGNC DVVIGIINNT VYDPLQPELD SFKEELDKYF KNHTSPDVL
 GDISGINASV VNIQKEIDRL 1169 1170 NEVAKNLNES LIDLQELGKY EQYI
 1192

SEQ ID NO. 5 - The amino acid sequence of the neutralizing fragment of the spike (S) gene of SARS CoV, clone 12 of 2774 strain

1055 RNFT TAPAICHEGK AYFPREGVFV FNGTSWFITQ RNFFSPQIIT TDNTFVSGNC DVVIGIINNT
 VYDPLQ 1620 1621 PELDSFKEELDKYF KNHTSPDVL GDISGINASV VNIQKEIDRL NEVAKNLNES
 LIDLQELGKY EQYI 1192

SEQ ID NO. 6 - The amino acid sequence of SΔ11 fragment of the spike (S) gene of SARS CoV, clone 12 of 2774 strain

1 MFIFLLFLTL TSGSOLDRCT TFDDVQAPNY TQHTSSMRGV YYPDEIFRSD TLYLTQDLSL
 PFYSNVTGFH 70
 71 TINHTFGNPV IPFKDGIYFA ATEKSNVVRG WVFSGTMNNK SQSVIIINNS TNVVIRACNF
 ELCDNPFFAV 140
 141 SKPMGTQHT MIFDNAFNCT FEYISDAFSL DVSEKSGNFK HREFVFNK DGFLYVYKGY
 QPIDVVRDLP 210

211 SGFNTLKPIF KLPLGINITN FRAILTAFSP AQDIWGTSAA AYFVGDLKPT TFMLKYDENG
TITDAVDCSQ 280

281 NPLAELKCSV KSFEIDKGIY QTSNFRVVPV GDVVRFPNIT NLCPFGEVFN ATKFPSVYAW
ERKKISNCVA 350 351 DYSVLYNSTV FSTFKCYGVS ATKLNDLCFS NVYADSFVVK GDDVRQIAPG
QTGVIADYNY KLPDDFMGCV 420 421 LAWNTRNIDA TSTGNVNYKY RYLRHGKLRP FERDISNVPF
SPDGKPCTPP ALNCYWPLND YGFYTTTGIG 490 491 YQPYRVVVLV FELLNAPATV CGPKLSTDLI
KNQCVNFNFN GLTGTGVLTP SSKRFQPFQO FGRDVSDFTD 560 561 SVRDPKTSEI LDISPCSFGG
VSVITPGTNA SSEVAVLYQD VNCTDVSTAI HADQLTPAWR IYSTGNNVFQ 630 631 TQAGCLIGAE
HVDTSYECDI PIGAGICASY HTVSLLRSTS QKSIVAYTMS LGADSSIAYS NNTIAIPTNF 700 701
SISITTEVMP VSMAKTSVDC NMYICGDSTE CANLLQYGS FCTQLNRALS GIAAEQDRNT REVFAQVKQM
770 771 YKTPTLKYFG GFNFSQILPD PLKPTKRSFI EDLLFNKVTI ADAGFMKQYG ECLGDINARD
LICAQKFNGI 840 841 TVLPPLLTDD MIAAYTAALV SGTATAGWTF GAGAALQIPF AMQMAYRFNG
IGVTQNVLYE NQKQIANQFN 910 911 KAISQIQESL TTTSTALGKL QDVVNQNAQA LNTLVKQLSS
NFGAISSVLN DILSRDKVE AEVQIDRLIT 980 981 GRLQSLQTYV TQQLIRAAEI RASANLAATK
MSECVLGQSK RVDFCGKGYH LMSFPQAAPH GVVFLHVTYA 1050 1051 PSQERNFETA PAICHEGKAY
FPREGVFEVN GTSWFITQRN FFSPQIITTD NTFVSGNCDV VIGIINNTVY 1120

1121 DPLQPELDSF KE

1132